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| APPLICATION NO. | FILING DATE | FIRST NAMED INVENTOR | ATTORNEY DOCKET NO. | CONFIRMATION NO. |
|---|-------------|----------------------|--------------------------|------------------|
| 09/680,726 | 10/05/2000 | Richard P. Schneider | 10004229-1 | 2517 |
| 7590 12/12/2005 | | | | |
| Agilent Technologies Legal Department 51U PD Intellectual Property Administration PO Box 58043 Santa Clara, CA 95052-8043 | | | EXAMINER DIAZ, JOSE R | |
| | | | ART UNIT 2815 | PAPER NUMBER |
| DATE MAILED: 12/12/2005 | | | | |

Please find below and/or attached an Office communication concerning this application or proceeding.

AK

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|------------------------------|------------------------|---------------------|--|
| Office Action Summary | Application No. | Applicant(s) | |
| | 09/680,726 | SCHNEIDER ET AL. | |
| | Examiner | Art Unit | |
| | José R. Díaz | 2815 | |

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 08 November 2004.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 3-32 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 3-32 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
 Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
 Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Claim Rejections - 35 USC § 112

1. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

2. Claim 3-27 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.
3. Claim 3 recites the limitation of "positioned at height x, where $0 \leq x < z$, between heights x and z." It is not clear to the examiner the phrase "between heights x and z". Please clarify the meaning of such phrase.
4. Claim 3 recites the limitation "the refractive index" in line 11. There is insufficient antecedent basis for this limitation in the claim.
5. Claims 4-27 are rejected due to their dependency on claim 3.

Claim Rejections - 35 USC § 102

1. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

2. Claims 3-32 are rejected under 35 U.S.C. 102(b) as being anticipated by Peake et al. (US Pat. No. 6,728,289 B1).

Regarding claims 3, 12, 15-17, 25 and 28-32, Peake et al. teaches a VCSEL device [col. 8, line 5] comprising: a device structure, having a height z and an aperture 114), including

an active layer (1708, 1808, 1908, and 2008) [see figs. 17-20], and

upper and lower DBR on the upper and lower surfaces of the active layer and adjacent thereto (1706, 1710, 1810, 1806, 1906, 1910, 2006, and 2010) [see figs. 17-20];

a layer having a non-planar surface (102) within the device structure, positioned at a height x [col. 5, lines 57-65 and abstract].

contacts for applying a voltage across the active region [col. 9, lines 10-15]; and

a light emission property (i.e. refractive index) that varies within the aperture and the light output is in spatially fixed modes [see col. 7, lines 2-4 and col. 8, lines 30-38].

Regarding claim 4, Peake et al. teaches that the refractive index has a lengthscale on the order of the lasing wavelength [col. 8, lines 52-55].

Regarding claim 5, Peake et al. teaches a substrate having a first side adjacent to the DBR [see col. 8, lines 46-48].

Regarding claims 6-7, 9, 11, 14, 19-20, 22, 24, and 27, Peake et al. teaches that the non-planar layer is a texturing layer [col. 4, lines 42-46]. Furthermore, with regards to the process steps of patterning or polishing described in the claims, Applicant should noted that such limitations contain method of making characteristics given no patentable weight in determining patentability of the final device structure. Note that a "product by process" claim is directed to the product per se, no matter how actually made, In re

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Brown, 173 USPQ 685; In re Luck, 177 USPQ 523; In re Fessmann, 180 USPQ 324; In re Avery, 186 USPQ 161; In re Wertheim, 191 USPQ 90 (209 USPQ 554 does not deal with this issue); In re Marosi et al, 218 USPQ 289; and particularly In re Thorpe, 227 USPQ 964, all of which make it clear that it is the patentability of the final product per se which must be determined in a "product by process" claim, and not the patentability of the process, and that an old or obvious product produced by a new method is not patentable as a product, whether claimed in "product by process" claims or not. Note that applicant has the burden of proof in such cases, as the above case law makes clear.

Regarding claims 8, 10, 13, 18, 21, 23 and 26, Peake et al. teaches that the non-planar layer is a layer within at least one of the upper or lower DBR [see col. 8, lines 22-24].

Response to Arguments

3. Applicant's arguments filed November 8, 2004 have been fully considered but they are not persuasive. Applicant argues that Peake et al. fails to teach the new limitation "wherein the light emission property enables higher order spatial modes" [page 7 of remarks]. However, the examiner disagrees. Peake et al. explicitly teaches the limitation of obtaining high modes in column 8, lines 50-53, regardless of the argued mode discrimination. Thus, Peake et al. still anticipates the claimed invention. As such, the rejection is considered to be proper.

Conclusion

4. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than **SIX MONTHS** from the date of this final action.

Correspondence

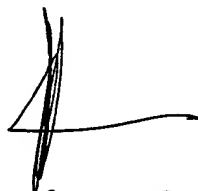
Any inquiry concerning this communication or earlier communications from the examiner should be directed to José R. Díaz whose telephone number is (571) 272-1727. The examiner can normally be reached on Monday through Thursday.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Kenneth Parker can be reached on (571) 272-2298. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

José R. Díaz
Examiner
Art Unit 2815



SRE Kenneth Parker
TCL 2815